

ing-shaft corresponding to that on the opposite wall. On the nave side, the vault (or at least the roof) being much higher, a shaft was first carried up from the top of the nave capital, but soon afterwards from the ground. Then a separate shaft was devoted to the bearing of each of the two nave arches between which the great column stood; and from these four aceretences we derive two forms of columns which were in frequent use in this and the next style: the first, a square central core, with a half shaft attached to each side, as in the nave of St. Mary's, Stafford, and Rothwell, Northamptonshire; and the second, a cluster of four equal and isolated shafts, which are generally united by a central band or fillet of stone, or (as at Worcester Cathedral) of metal, to prevent them from bulging away from each other; an effective and beautiful arrangement, which is seen in the Temple Church, and the almost identical examples in the chapel of the bishop's palace at Auckland, Durham. This afterwards led to the subdivision of the members, or recessed orders of the same arches; so that in pure gothic arches the bunches of moldings are borne by shafts, or bunches of shafts, so nearly identical in size and position, that sometimes the intervention of a capital alone prevents their absolute continuity.

Thus, what we have called the "disintegration of Norman masses" was effected, and a repetition and isolation of parts was gained.

6. It is now generally admitted, that in the necessities of vaulting we must look for the true origin of the Gothic or pointed style. That this is strictly true, and that no amount of pointed arches scattered dispersedly, and without system, over a building, as in doorways, triforia, nave, and chancel arcades, &c., would ever have effected the same result, we will endeavour to shew. Our position is, that by the requirements of stone vaults the adoption of the pointed arch was forced upon church architects; not that there was any reluctance in adopting it, for they at once felt it was the very thing which suited their wants, not only in this but in all other respects; but that they actually had no alternative whatever but to accept it.

Although almost every compartment of vaulting suggests the pointed arch in one or other of its cells, or intersecting ribs, it is by no means every vault which was built on a distinct knowledge and recognition of the principle: that was reserved for the builders of the Transition period. It is well known to every one at all acquainted with the elements of architecture, that in covering a parallelogram with a stone vault, transverse or diagonal semi-circular ribs necessitate either *skilled* (or raised) or else pointed arches on each of the four, and especially at the two narrower sides, in order that the crown of all the arches may be of nearly the same height with very different widths. Thus, to take a very simple example, the passage into the cloister towards the west end of Worcester Cathedral, of Transition Norman date, has semi-circular diagonal ribs; very slightly pointed arches thrown directly across the passage at intervals, at right angles with the side walls; and distinctly pointed cells, though without ribs. Now, supposing this to be part of the vaulting of an aisle, and out of a passage with dead walls on each side, it is clear that on one side of the bay, or compartment, the pier arch would come in, and on the other a window immediately opposite, though perhaps not quite so wide. As the cell on each side is pointed, so the window and pier-arch must be concentric, or pointed also; because, if a semi-circular arch is used, it must obviously come much lower than the top of the cell; producing at once a waste of space between it and the crown of the round arch, and a very awkward effect from the dissimilarity of the curves. This is well illustrated in the nave aisle of the Temple Church, where a semi-circular window is fitted into a pointed cell on one side, though a pointed nave arch occupies the other.

On the contrary, the choir of the very same building, which is advanced early English, affords a most convincing proof of this view. Here the pier-arches themselves actually form the groin-ribs of the vault, which is of such a construction, that no other form could have been adapted to it except the pointed; in other words, the pier-arches are forced into the pointed shape by the requirements of the vaulting.

7. That the discovery of the pointed arch (as it is perhaps erroneously called) did not by any means at once suggest, or even necessarily lead to, the formation of the Gothic style, is a fact which cannot be controverted. The pointed arch was long used in many buildings, and in many parts of them, without even a suspicion of its latent tendencies; as, for instance, in the several edifices before cited, in which the properties are, as it were, cancelled, and its language contradicted by a tier of the old semicircular form added immediately above the pointed row. It is really difficult to conceive that an architect, who was fully conscious of the difference between the two forms, as subsequently developed, would have done this. He undoubtedly would have carried out the new principle, had he felt it to be such, by avoiding so fatal a recurrence in the old. It is only when we find pointed forms introduced by the composition of the vaulting, that a building is really Gothic: thus, the nave of Fontaine Abbey, with pointed pier-arches, but semicircular clerestory windows, and (as it probably had) a wooden roof, was purely Romanesque. But the same, with semicircular pier-arches and pointed clerestory windows, adapted to the cells of a pointed vault, would have claimed (at all events, in a much higher degree) the character of a Gothic building.

The pointed arch is, in reality, only one out of many elements of the pointed style. It was seized upon as a congenial feature, and the use of an important member became a principal means of effecting the complete and symmetrical development of the entire body. Church architecture had become, by a separate process, ready for its reception; and thus it occupied, with ease and natural dignity, the place which awaited it. It began, by actual necessity of construction, to be systematically used in lateral cells of vaults; then both aisle window-arch and pier-arch were made concentric with their curves, or groin-ribs; then the triforium was assimilated to the row of nave-arches, of which it was, as it were, the reduplication (the earliest pointed example being, perhaps, in the choir of Canterbury); and again, the clerestory windows were pointed to suit the vault of the nave. The nave-vault necessitated a high-pitched gable, and the vertical lines of vaulting-shafts within, and of bold buttresses without, to counteract the lateral stress, and of vertical pinnacles to counter-balance the strain upon these; and then came pointed doorways, as a matter of course, to suit the pointed windows and pointed arches within. Thus all the parts of a church involved vertical lines and pointed curves by one and the same process of advancement in the art.

Farther than this, pointed vaulting has a lateral thrust, while Romanesque, or semicircular, has a vertical pressure: hence the great Gothic characteristic of sloping or pyramidal outline was attained by the gradations of the buttresses, and the inclination of the flying arcs thrown off from them to abut the clerestory.

We trust that we have successfully demonstrated the reasons of the apparently singular fact, that not one of our many Norman abbatial or cathedral churches either has or ever had a roof vaulted in stone. We are aware that this can only be said of England, for there are instances abroad which it would be impossible at present to discuss.

**THE LIGHT AND HEALTH TAX.**—Lord Duncan has given notice of his intention, on the motion for going into committee on the Health of Towns Bill, to move the following resolution:—"That whereas the committee of the Health of Towns Association, and the directors of the Metropolitan Association for Improving the Dwellings of the Working Classes, have reported, 'That no sanitary measure can be tolerably complete which does not embrace the subject of the window duties; that the said window duties, as at present levied, act as a direct premium on the bad construction of houses in general; and by their unequal pressure make the poor pay quadruple the amount of window-tax paid by the rich; therefore, it is inexpedient to proceed with the Health of Towns Bill without a prior consideration of the unequal pressure of the window-tax upon the houses of the working classes in Great Britain.'"

## CHURCHES AND CHAPELS.

The substitution of open benches for closed pews in the church of St. Margaret, Ipswich, has made it, said the Bishop of Norwich, what the Church of England ought to be,—the poor man's church, with sittings open to all; and he hoped in future to see the Church of England generally divested of its pews and incumbrances, so that rich and poor might alike have access.

Woburn Church is now undergoing the extensive repairs determined on, at the cost of the Duke of Bedford.—St. Martin's Chapel, Guildford, is about to be restored. Of the early edifice, which is of great antiquity, a considerable portion still remains. It is mentioned by Bishop Wulfhelm a.d. 1463.

The steeple of Wednesbury parish church has been injured by lightning.—The new church recently erected at Birmingham, in connection with the Roman Catholic convent in Hunter's-lane, from designs by Mr. Pugin, is a building consisting of a nave, north aisle, and tower, and is capable of containing about 400 persons. It is of brick, with stone facings, and is dedicated to the Virgin Mary and St. John the Evangelist. The estimated cost is about £2,000. The opening will take place in August next. The inmates of the adjoining 'House of Mercy,' or refuge for unemployed servant-girls, and those of the convent, have access to that part of the church devoted to them, through an arched cloister on the north. The area of the church is to be paved with small tiles, alternately blue and red; and the chancel windows are to be ultimately beautified with stained glass.—The cost of the repairs and restoration of St. George's Church, Leicester, as allowed by the architect, Mr. Parsons, to the contractors, Messrs. Broadbent and Hawley, will be £1,430 odds, to meet which, contributions to the amount of £1,548 odds were received, besides a grant of £200, promised by the Church Building Society, and other offers, not required. The lighting conductor was examined and approved by Sir William Soow Harris.—The repairs of the parish church of Bridlington are said to be progressing very slowly and imperfectly. "The trifling lots of the building now under repairs, to all appearance, is still to be disgraced by half and totally blanked-up windows, &c."

The foundation stone of the new church intended to be erected for the district parish of Coldharat, in Oldham, and dedicated in the Holy Trinity, was laid on Thursday week. Mr. E. H. Sheldall is the architect; Mr. E. Whitaker, of Coldharat, the builder.—The new church of St. Paul at King Cross, Halifax, consecrated on 20th ult., is built in the "Early English" style, according to the old, but "first pointed" of the new nomenclature. It was constructed by Mr. R. D. Chantrell. The plan is an oblong square divided into nave and two side aisles, with a spacious chancel at the east end, in which is a triplet window, filled with painted glass, executed by Mr. Thomas Willemet, of Green-street, Grosvenor-square. The seats are low, and the wood-work has all been stained. The tower is massive, and is surmounted by a spire. The stone work is in regular courses of wall-stones with ashlar quoins, all squared and bedded, but not made to imitate marble or marine cobbles, as in some modern churches. The roof is covered with the common grey or stone slate of the neighbourhood. The interior of the walls is plastered, and the chancel is covered with cement, smoothed for paint or colour, but not jointed to imitate ashlar.—The ancient church of St. Mary, South Leith, is about to undergo considerable repair. In 1836 the steeple was taken down: the rebuilding of it forms part of the contemplated improvements. This venerable structure was built about the year 1450, and has been the scene of the labours of several gifted literary men.—During the last few weeks, the whole of the west front of St. Mary's Church, Nottingham, has been taken down, and matters are in a state of great forwardness for its re-edification.

**THE PAVING NOISANCE.**—It is not many months since we had to remark upon the injudicious method of wood-paving adopted in Cornhill. The whole is now being raised, the portion next the Exchange with granite.